

Title (en)  
OSMOTIC DESALINATION PROCESS

Title (de)  
VEFAHREN ZUM ENTSALZEN DURCH OSMOSE

Title (fr)  
PROCESSUS DE DESSALAGE OSMOTIQUE

Publication  
**EP 1355859 A2 20031029 (EN)**

Application  
**EP 02714804 A 20020201**

Priority  
• US 0202740 W 20020201  
• US 26574501 P 20010201

Abstract (en)  
[origin: WO02060825A2] An energy efficient desalination process that does not produce waste products involves the extraction of water from a first solution, such as seawater, by using a second concentrated solution to draw the water from the first solution across a semi-permeable membrane. By manipulating the equilibrium of the soluble and insoluble species of solute within the second solution in favor of the soluble species of the solute, a saturated second solution can be used to generate osmotic pressure on the first solution. Also, by adjusting the equilibrium in favor of the less soluble species after the water has been drawn from the first solution, a portion of the solute can easily be precipitated out. Heating the second solution decomposes the solute into its constituent gasses. The constituent gasses and precipitated solute may be recycled through the process to affect the changes in equilibrium and eliminate waste products. Additionally, by using the waste steam from industrial sources and a heat pump to effectively distribute heat through the present method, the present method exhibits greater energy efficiency than prior art methods.

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**C02F 1/44**; **B01D 61/00**

IPC 8 full level  
**B01D 11/00** (2006.01); **B01D 61/00** (2006.01); **C02F 1/00** (2006.01); **C02F 1/44** (2006.01); **C02F 1/02** (2006.01)

CPC (source: EP US)  
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See references of WO 02060825A2

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